UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,249	06/11/2001	Stanley John Becker	608-297	7974

23117 7590 06/27/2007
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER	
LEUNG, JENNIFER A	
ART UNIT	**PAPER NUMBER**
1764	
MAIL DATE	**DELIVERY MODE**
06/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/877,249
Filing Date: June 11, 2001
Appellant(s): BECKER ET AL.

Leonard C. Mitchard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 20, 2007 appealing from the Office action mailed on April 20, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 4,374,663	COLLIN et al.	02-1983
US 2,794,681	SEUSS	06-1957

US 4,461,743	CHOWDHURY et al.	07-1984
US 3,411,716	STEPHAN et al.	11-1968
US 5,801,265	WAGENER et al.	09-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 2, 5, 6, 10, 11, 19, 20, 47, 48, 51, 52, 54, 55, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury et al. (US 4,461,743).

Regarding claims 1 and 47, Collin et al. discloses a reactor (FIG. 3; column 3, lines 36-60) comprising more than one nozzle **46** extending into the reactor. Additionally, Collin et al. discloses that each nozzle **46** may be constructed according to the types disclosed in FIG. 1 or

FIG. 2 (column 2, line 58 - column 3, line 35), wherein each nozzle **46** comprises an inlet pipe for an oxygen-containing gas (i.e., supply pipe **4**) and a surround means for surrounding a substantial portion of the inlet pipe with a sealed, inert fluid (i.e., jacket **7**, containing a cooling medium **5**, such as water). In addition, Collin et al. discloses a fluidization means in the form of nozzles **50** opening out in the bottom of the lower reaction chamber **43** of the reactor. Collin et al., however, is silent as to whether the fluidization means may instead comprise a grid. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute other known fluidization means, such as a grid, for the fluidization means in the apparatus of Collin et al., on the basis of suitability for the intended use, because the Examiner takes Official Notice that the use of grids for providing adequate fluidization of a mass of solids is well known in the art, and it has been held that the substitution of known equivalent structures merely involves ordinary skill in the art.

Collin et al. is further silent as to surround means 7 including a means for detecting a change in pressure of the inert fluid **5** that surrounds the inlet pipe **4**, wherein the inert fluid **5** is present in a limited supply sufficient to replace minor leaks.

Suess (embodiment of FIG. 5; column 3, line 59 to column 4, line 32) teaches an inlet pipe (i.e., nozzle **3**) suitable for feeding gaseous substances to a reactor (column 5, lines 4-14), wherein the inlet pipe **3** comprises a surround means (i.e., jacket **3'**) surrounding a substantial portion of the inlet pipe **3** and provided with a sealed supply of a cooling medium (i.e., from a cooling medium source **5**, usually a liquid medium such as water; column 1, lines 38-55). In addition, Suess teaches means for detecting a change in pressure of the cooling medium **5** surrounding the inlet pipe **3** (i.e., by elements **10a**, **10b**, **10''** and **10'''**, which actuate according

to a pressure difference, thereby initiating contact **11** to close the electric circuit and control a servomotor **9'''**), wherein the surround means **3'** is provided with a limited supply of cooling medium **5** sufficient to replace leaks (i.e., "by the contact **11** controlling servomotor **9'''** the amount of the cooling medium is increased at the moment in which the amount discharged decreases because of a leakage... In this manner the detrimental effect of a leakage on the cooling procedure may be compensated to a certain extent," column 4, lines 21-33).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a means for detecting a change in pressure of the inert fluid of the surround means in the apparatus of Collin et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the provision of such means would help avoid process disturbances due to leakage or similar defects occurring in the nozzles and parts or elements connected therewith, as taught by Suess (column 1, lines 17-33).

The collective teaching of Collin et al. and Suess is silent as to whether the supply of cooling medium **5**, such as water, may instead comprise a supply of inert gas. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute a supply of inert gas for the supply of cooling medium **5** in the modified apparatus of Collin et al., on the basis of suitability for the intended use, because the use of inert gas for cooling nozzle structures is well known in the art, and the substitution of known equivalents merely involves routine skill in the art. Chowdhury et al. (FIG. 4; column 4, lines 14-40) evidences conventionality by teaching an apparatus comprising an inlet pipe (i.e., oxygen pipe **20**) including a surround means for surrounding a substantial portion of said pipe with a supply of sealed, inert fluid (i.e., second pipe **21**, for defining a sealed, annular space **22** with an inlet **24**

for a supply of inert fluid). In particular, Chowdhury et al. teaches that suitable supplies of inert fluid include, "a *gas* such as air, nitrogen or carbon dioxide... injected into annular space **22**," or, in another form, "a fluid, *either gas or liquid*, is passed through the annular space... Heat is thus removed from oxygen pipe **20** by the heat transferring resisting fluid which is *typically one of nitrogen, carbon dioxide, air or water*." Thus, a supply of an inert gas or a supply of a cooling liquid are known mediums in the art for providing the same function of cooling the inlet pipes.

Regarding claims 2 and 48, Collin et al. discloses, by illustration, at least 85% of the inlet pipe **4** being surrounded by surround means **7** (see FIG. 1, 2).

Regarding claims 5 and 51, surround means 7 comprises one or more outer pipes surrounding a substantial portion of inlet pipe **4** (i.e., the nozzles comprise plural outer pipes as defined by jacket **7** and wall **17**; FIG. 2).

Regarding claims 6 and 52, Collin et al. is silent as to the apparatus comprising differential expansion means for the inlet pipes **4** and surround means **7**. As defined by the specification (page 4, lines 5-7) differential expansion means may include bends in the inlet pipe and/or pig-tails. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide means for allowing differential expansion of the inlet pipes and the surround means in the modified apparatus of Collin et al., on the basis of suitability for the intended use, because the Examiner takes Official Notice that the provision of bends and/or pig-tails in pipes for enabling differential expansion is well known in the art. Chowdhury (FIG. 4; column 4, lines 14-40) further evidences the conventionality of such a configuration by teaching an inlet pipe **20** and surround means **21** comprising differential expansion means (i.e., as shown in the figure, a 90-degree bend of the pipes).

Regarding claims 10, 11, 54 and 55, the reactor comprises means for suppressing ingress of reactants into the inlet pipes **4**, wherein said means comprises providing the oxygen containing gas in the inlet pipe **4** at a pressure higher than the pressure in the reactor, using a compressor **45** (FIG. 3).

Regarding claims 19 and 63, Collin et al. illustrates the oxygen-containing gas being supplied to inlet pipe **4** via a common end box having inventory (i.e., a supply line **3** containing oxygen, comprising an annular conduit surrounding reactor **41**; FIG. 1, 3; column 2, lines 58-64).

Regarding claims 20 and 64, Collin et al. discloses, "Preheated air was supplied through the nozzles **46** at *a rate required for producing the heat of reduction and for maintaining, by partial combustion of the coal, a temperature of 970 °C in the reactor*," (column 4, lines 56-59). However, Collin et al. is silent as to the nozzles being operably connected with "flow restriction means". In any event, such control elements would be inherent of the apparatus of Collin et al., as evidenced by the apparatus having the ability to vary and maintain a sufficient rate of air supply, and hence, a sufficient reaction temperature. Also, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide such flow restriction means to the nozzles in the modified apparatus of Collin et al. because the Examiner takes Official Notice that the provision of fluid control means, such as flow restrictions, for enabling the regulation of a feed rate to a reactor is well known in the art.

2. Claims 12-16 and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury (US 4,461,743), as applied to claims 1 and 47 above, and further in view of Stephan et al. (US 3,411,716).

Regarding claims 12, 13, 56 and 57, Collin et al. is silent as to the inlet pipe **4** comprising

ingress suppression means in the form of a restriction to the outlet of the inlet pipe. Stephan teaches a water-cooled oxygen injection nozzle (FIG. 1, 3; column 2, lines 41-69) comprising an inlet pipe **1** that is surrounded by a water-cooling jacket defined by concentric pipes **4** and **5**. Additionally, the inlet pipe **1** comprises a restriction to the outlet of the inlet pipe **1** (i.e., plug **15** with control pipe **20**; FIG. 3, 4), the restriction further defining an orifice (i.e., a venturi orifice defined by insert **23**). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a restriction to the outlet of the inlet pipe in the modified apparatus of Collin et al. because the oxygen distributing action of the nozzle is enhanced by the axial jet of oxygen projected centrally thereof from the orifice of the restriction, as taught by Stephan (column 3, lines 3-17).

Regarding claims 14-16 and 58-60, although the collective teaching of Collin et al. and Stephan et al. is are silent as to the restriction being located at the specifically recited locations, it would have been obvious for one of ordinary skill in the art at the time the invention was made to select an appropriate location for the restriction in the modified apparatus of Collin et al., on the basis of suitability for the intended use, since shifting location of parts was held to have been obvious, and where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only routine skill in the art.

3. Claims 18 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury (US 4,461,743), as applied to claims 1 and 47 above, and further in view of Wagner et al. (U.S. 5,801,265).

The collective teaching of Collin et al., Suess and Chowdhury is silent as to the distance between the inlet pipes being significantly in excess of the potential flame length. Wagner

teaches a reactor **36** comprising oxygen gas inlets **60**, wherein the inlets **60'**, **60"** are positioned such that the distance **D** between inlets **60'**, **60"** is significantly in excess of a potential flame length (FIG. 3; column 4, lines 15-38). It would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the inlet pipes at a distance significantly in excess of the potential flame length in the modified apparatus of Collin et al., on the basis of suitability for the intended use, because such arrangement provides an improved system for introducing oxygen containing gas that avoids explosions, deflagration, or other anomalous process conditions, as taught by Wagner (column 2, lines 13-18).

(10) Response to Argument

1. Comments with respect to the rejection of claims 1, 2, 5, 6, 10, 11, 19, 20, 47, 48, 51, 52, 54, 55, 63 and 64 under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury et al. (US 4,461,743).

Firstly, please note that in the rejection of claims 1 and 47, the statement that, "the use of grids for providing adequate fluidization of a mass of solids is well known in the art," has been taken to be admitted prior art, because Appellant has failed to traverse the Examiner's assertion of official notice.

Secondly, Appellant (beginning at page 10, line 2) argues that,

> "... Collin... discloses that the cooling medium continually flow through a cooling jacket, entering via an inlet and exiting via an outlet... There is no disclosure or suggestion in Collin that the cooling medium surrounding the inlet pipes should be "sealed"."

Additionally, Appellant (beginning at page 11, line 6) argues that,

> "In both the Final Action and the Advisory Action, the assertion is made that "the features upon which the Applicant relies (i.e., a surround means having an inlet, but no outlet, for the inert gas supply) are not recited in the claims". In reply, it is not necessary to include such limitations, since the claim specifically requires that the inert gas surround the inlet pipes be "sealed". There can be no outlet for the inert gas if the inert gas surrounding the inlet pipes is sealed. This is clear from the present claim language. To further recite that the surround means has no outlet for the inert gas would be repetitive and redundant."

The Examiner respectfully disagrees. Claim 1 (lines 6-7 and 10-11) currently recites,

> "surround means for surrounding a substantial portion of said inlet pipes in said reactor with an inert gas ...
>
> wherein the surround means are provided with a supply of an inert gas, and further wherein the inert gas surrounding the inlet pipes is sealed."

The Examiner maintains that the modified apparatus of Collin et al. meets the limitations of the claim, given that the inert gas (e.g., to be contained in the jacket **7** of Collin et al.; see FIG. 1 or 2) is "sealed" or closed off from the contents of the fluidized bed reactor, and given that the inert gas is further "sealed" or closed off from the contents of the inlet pipe (i.e., of supply pipe **4**). There is no outlet on the surround means **7** for the inert gas to pass into the fluidized bed reactor, and there is no outlet on the surround means **7** for the inert gas to pass into the inlet pipe.

It is further suggested from Appellant's disclosure that a "sealed" inert gas does not mean that the inert gas must be completely closed off from its surroundings. For instance, Appellant's FIG. 1 shows a surround means (i.e., outer pipe **3**) that is in open fluid communication with the inert gas supply pipe **14**. Although the inert gas within the surround means **3** may be "sealed" with respect to the contents of the fluidized bed reactor **1** or the contents of the inlet pipe **10**, the

inert gas is clearly not "sealed" with respect to the inert gas supply line **14**.

Although claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004).

In the instant case, the limitation of an inert gas that is "sealed" is broad enough to read on an apparatus comprising the surround means structured according to Appellant's FIG. 1, as well as an apparatus comprising the surround means structured according to the modified apparatus of Collin et al. In other words, claim 1 is broad enough that it could be viewed as the *generic claim* to the species defined by an apparatus comprising Appellant's surround means, as well as the species defined by the modified apparatus of Collin et al.

Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment. *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004); *Liebel-Flarsheim Co. v. Medrad Inc.*, 358 F.3d 898, 906, 69 USPQ2d 1801, 1807 (Fed. Cir. 2004).

Thirdly, regarding the combination of Collin et al. with the teachings of Suess, Appellant (beginning at page 10, line 7) argues,

> "Suess is directed to the problem of leakage of cooling medium supplied to nozzles, which is different to the problem addressed by Collin, namely the prevention of particles of reduced iron sticking to the nozzles. For this reason alone, Collin and Suess

would not have been combined by one of ordinary skill."

The Examiner respectfully disagrees. Both of the references to Collin et al. and Suess would have been considered as analogous art, since both references relate to the same field of endeavor; namely, the provision of means for cooling an inlet pipe used for introducing a substance into a reaction chamber. Furthermore, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. One must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Appellant (beginning at page 10, line 10) further argues,

> "Even if Collin and Suess were combined... the presently claimed invention would not have resulted or have been suggested thereby...
>
> Suess... requires that water be supplied to the cooling jacket and then discharged therefrom in order that a pressure change may be detected. The cooling jacket of Suess is not structured such that the coolant surrounding the inlet is sealed, as required by the presently claimed invention. In fact, Suess would be rendered unsatisfactory for its intended purpose if the cooling jacket were sealed since, in a sealed system, the two membranes would register the same pressure and, if a leak occurred, the two membranes would still read the same pressure. Consequently, there would be no detection of any pressure change of the coolant. Since Suess specifically requires that the coolant is not sealed, Suess leads away from the presently claimed invention and doe[s] not render obvious the claimed invention when combined with Collin."

The Examiner respectfully disagrees. As commented above, the modified apparatus of Collin et al. meets the limitations of the claim, given that the inert gas (e.g., to be contained in the jacket **7**

of Collin et al.; see FIG. 1 or 2) is "sealed" or closed off from the contents of the fluidized bed reactor, and given that the inert gas is further "sealed" or closed off from the contents of the inlet pipe (i.e., of supply pipe **4**). There is no outlet on the surround means **7** for the inert gas to pass into the fluidized bed reactor, and there is no outlet on the surround means **7** for the inert gas to pass into the inlet pipe. Suess, similarly, teaches a surround means (i.e., jacket **3'**; FIG. 5) configured like the surround means of Collin et al., wherein the surround means is "sealed" or closed off from the contents of the chamber **1**, and wherein the surround means is "sealed" or closed off from the contents of the inlet pipe **3**. Thus, Appellant's argument that, "Suess would be rendered unsatisfactory for its intended purpose if the cooling jacket were sealed," is not found persuasive, since the surround means as disclosed by Collin et al. and taught by Suess would meet the broadly claimed limitation of being "sealed".

Fourthly, regarding the combination of Collin et al. and Suess with the teachings of Chowdhury et al., Appellant (beginning at page 11, line 15) argues,

> "... While Chowdhury discloses a heat transfer resisting fluid such as nitrogen, carbon dioxide, air or water, as noted above, Collin is clear that a gas is inappropriate for solving the problem of particles sticking to a nozzle, and solves the problem by employing a liquid, typically water. Collin therefore leads away from the use of gaseous media."

The Examiner respectfully disagrees. Collin et al. merely indicates that the use of cooling water within the surround means is preferred or exemplary (see column 2, lines 11-13; also, column 2, lines 64-65). Although some disadvantages may occur from using an inert gas such as "cooling air" within the surround means (see Collin et al: column 1, lines 48-68), disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or

nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Also, a known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). One of ordinary skill in the art would have found it obvious to weigh the advantages and disadvantages of using a gaseous cooling medium or a liquid cooling medium.

It is further noted that Collin et al. merely presents a single prior art example of "cooling air". This, however, does not mean that all forms of gaseous media do not work. There is no evidence supporting Appellant's assertion that all other forms of gaseous media would be inappropriate for cooling the inlet pipes of Collin et al. Furthermore, the solution to the "sticking" problem, as proposed by Collin, is not that the cooling medium must be a liquid, but rather, that the cooling medium must be capable of cooling the exterior surface of the nozzles to a temperature lower than 200 °C below the melting point of the reduced metal. (See abstract; column 2, lines 3-19).

In addition, common sense tells us that the temperature reducing ability of a cooling medium does not solely depend on the composition of the cooling medium itself, but also, a variety of other factors, including the initial temperature of the cooling medium, the flow rate of the cooling medium, and the temperature within the reaction chamber, to name a few.

As such, the Examiner maintains that it would have been obvious for one having ordinary skill in the art at the time the invention was made to substitute another known, suitable cooling medium (such as an inert gas) for the cooling medium within the surround means in the modified apparatus of Collin et al., on the basis of suitability for the intended use and absent a showing of

unexpected results thereof, because the interchangeability of an inert gas for a liquid as a cooling medium for cooling nozzle structures is well known in the art, as evidenced by Chowdhury (see column 4, lines 26-32), and the substitution of known equivalents would have merely involved routine skill in the art. Furthermore, a patent claim can be proved obvious merely by showing that the combination of elements was obvious to try. When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.

Appellant (beginning at page 11, line 19) further argues,

> "... Moreover, Chowdhury does not relate to a gas-phase fluidized bed reactor but, instead, to an apparatus for injecting a mixture of liquid water and an oxygen-enriched gas into a gas-liquid reaction medium within a wet oxidation reactor. In addition, the problem addressed in Chowdhury (i.e. the prevention of evaporation of water in inlet pipes) is not the same as the problem addressed by Collin, i.e., the prevention of particles of reduced iron sticking to the nozzles."

The Examiner respectfully disagrees. Firstly, the references to Collin et al., Suess and Chowdhury et al. would have been considered as analogous art, since the references each relate to the same field of endeavor; namely, the provision of means for cooling an inlet pipe used for introducing a substance into a reaction chamber. Secondly, the Chowdhury reference was merely relied upon to evidence that the use of cooling mediums, including gaseous and liquid cooling mediums, for cooling nozzle structures is conventional in the art. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly

suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Lastly, regarding claim 47, Appellant (beginning at page 12, line 7) argues,

> "... the combination of Collin or Suess does not disclose or suggest that the surround means should be provided with a limited supply of inert gas sufficient to replace minor leaks, since both references disclose that a continuous supply and discharge of coolant is required. Thus, the combination of Collin and Suess (with or without Chowdhury) leads away from the invention of claim 47."

The Examiner respectfully disagrees and maintains that the modified apparatus of Collin et al. (as modified by Suess) meets the claim limitation of a "surround means... provided with a limited supply of inert gas sufficient to replace minor leaks." In particular, Suess specifically teaches that the surround means **3'** is provided with a limited supply of cooling medium **5** sufficient to replace leaks (i.e., "by the contact **11** controlling servomotor **9'''** the amount of the cooling medium is increased at the moment in which the amount discharged decreases because of a leakage... In this manner the detrimental effect of a leakage on the cooling procedure may be compensated to a certain extent," column 4, lines 21-33). Although the cooling medium may be continuously supplied to and discharged from the surround means, the amount of cooling medium will still be limited to a specific flow rate, e.g., a flow rate that compensates for any leakage of inert gas from the surround means.

2. Comments with respect to the rejection of claims 12-16 and 56-60 under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury et al. (US 4,461,743), as applied to claims 1 and 47 above, and further in view

of Stephan et al. (US 3,411,716).

Appellant's arguments with respect to the second ground of rejection are based solely on the asserted deficiencies of the combination of Collin et al., Suess and Chowdhury et al. Thus, the same comments as set forth above, under the first ground of rejection, apply.

3. Comments with respect to the rejection of claims 18 and 62 under 35 U.S.C. 103(a) as being unpatentable over Collin et al. (US 4,374,663) in view of Suess (US 2,794,681) and Chowdhury et al. (US 4,461,743), as applied to claims 1 and 47 above, and further in view of Wagner et al. (U.S. 5,801,265).

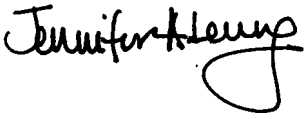
Appellant's arguments with respect to the third ground of rejection are based solely on the asserted deficiencies of the combination of Collin et al., Suess and Chowdhury et al. Thus, the same comments as set forth above, under the first ground of rejection, apply.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jennifer A. Leung 

Conferees:

Glenn Caldarola 

Jennifer Michener 

JENNIFER MICHENER
QUALITY ASSURANCE SPECIALIST